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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WEI, ZHENG

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/671,056	Applicant(s) BROKENSHERE ET AL.	
	Examiner ZHENG WEI	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,3-8,10-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :07/16/2007; 10/15/2007; 12/27/2007.

Remarks

1. In view of the Appeal Brief filed on 01/09/2008, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

2. Claims 1, 3-8, 10-14, and 16-20 remain pending and have been examined.

Information Disclosure Statement

3. The information disclosure statements filed on 07/16/2007, 10/15/2007 and 12/27/2007 have been placed in the application file, which the information referred to therein has already been considered.

Response to Arguments

4. Applicant's arguments, see pages 7-8, filed 01/09/2008 with respect to the rejection(s) of claim 1 under 35 U.S.C. § 103 has been fully considered and are persuasive. At page 7, last paragraph and page 8 first paragraph, the Applicant submits that the compiler with "-o" option only creates an executable file and does not create an object file as cited limitation in claim 1. The Examiner agrees to that and therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made. See Stallman reference.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claims 1, 3, 6-8, 10, 13-14 and 16, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oram (Oram et al., Managing Projects with make) in view of Stallman (Richard M. Stallman, Using the GNU Compiler Collection for GCC3.1)

Claim 1:

Oram discloses a method for compiling source code, said method comprising:

- receiving source code that includes a plurality of source code subtasks (see for example, p.79, example make file receives source code subtasks trac.c and main.c)
- independently selecting compile option (see for example, p.79, lines 9-11, define the proper compile option symbols in CFLAGS for each source file; also see example make file and related text)

But does not explicitly disclose independently selecting a processor type from the plurality of heterogeneous processor types for each of the plurality of source code subtasks. However, Stallman in the same analogous art of source code compilation discloses compilation option of plurality of heterogeneous processors type (see for example, p.10-16, a list of machine dependent options for different processor types, e.g., p.12 lines 43-46, a set of option can be selected for MIPS processor). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select different option according to different target process type. One would have been motivated to do so to select the proper symbols in CFLAGS to generate correct type executable code that can be run at different processes as suggested by Oram.

Oram further discloses

- selecting a first processor type from the plurality of heterogeneous processor types for a first source code subtask included in the source code (see for example, p.79, example code “make trac.o ‘CFLAGS = -DSTATS -DBSD’; cc

- DSTATS –DBSD –c trac.c”. The CFLAGS option can also include –m option as Stallman disclosed above for process type); and
- selecting a second processor type from the plurality of heterogeneous processor types for a second source code subtask included in the source code, wherein the second processor type is different than the first processor type(see for example, p.79, example code “make main.o ‘CFLAGS = -DBSD’; ‘cc –DBSD –c main.c’”. The CFLAGS option can also include –m option as Stallman disclosed above for process type); and
- creating an object file (library file) that includes a first object code corresponding to the first source code subtask and second object code corresponding to the second source code subtask, wherein the first object code is adapted to be processed by the first processor type and the second object code is adapted to be processed by the first processor type and the second object code is adapted to be processed by the second processor type. (see for example, p.33, example code, “ar r libops interact.o sched.o”. Two object files interact.o and sched.o are combined to generate a libops library file. The library file “libops” is considered as single file physically contains the same content and format of those two object files interact.o and shced.o. Furthermore, the “libops” performs the same way as one object file which contains two objects file or two separate object files during the linking/loading processes).

Claim 3:

Oram and Stallman discloses the method as described in claim 1 above, Oram also discloses wherein the selection of the first processor type is performed during compilation, the method further comprising:

- retrieving the first source code subtask from the plurality of source code subtasks (see for example, p.79, example make file receives source code subtasks trac.c and main.c);
- determining whether the first source code subtask includes a program directive (see for example, p.78, Conditional compilation, through preprocessor directives like `#ifdef` and `#ifndef`); and
- performing the selection of the first processor type in response to the determination (see for example, p.79, example code “S make full_test”).

But does not explicitly disclose determining whether the first source code subtask includes a program directive corresponding to one of the plurality of processors.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use `#ifdef` and `#ifndef` directives to define process type option for each source code subtask. One would have been motivated to do so to run on different hardware or operating system as suggested by Oram (see for example, p.78, section “Compiler Option and `#ifdef` directives”, first paragraph, “some of the alternatives reflect the need to compile and run on different hardware or operating systems”)

Claim 6:

Oram and Stallman disclose the method as described in claim 1 above, Oram further discloses the method comprising:

- retrieving the first source code subtask from the plurality of source code subtasks (see for example, p.79, example make file receives source code subtasks trac.c and main.c);
- identifying one or more operations included in the first source code subtask (see for example, p.79, example code about “make”, after running “\$make full_test”)
- matching one or more of the operations with one of the processor types from the plurality of heterogeneous processor types (see for example, p.79, example code for compiling trac.c and main.c file using different option); and
- performing the selection of the first processor type in response to the matching ((see for example, p.79, example code for compiling trac.c and main.c file using different option and generating different trac.o and main.o files).

Claim 7:

Oram and Stallman disclose the method as described in claim 1 above, Stallman also discloses the method as described in claim 1 further comprising:

- receiving a processor-specific command, the processor specific command (see for example, p.75, section 3.17 Hardware Models and Configurations, lines 11-14, “In addition, each of these target machine types can have its own

special options, starting with ‘-m’ to choose among various hardware models or configurations – for example, 68010 vs 68020...”)

Oram and Stallman further disclose following

- identifying a processor type from the plurality of heterogeneous processor types (see for example, p.79, example code make use the process type option which is defined in CFLAS as addressed above); and
- performing the selection of the first processor type based upon the processor-specific command (see for example, p.79, “\$make full_test” and related text; also see p.79, “make passes the right –D option to each command” and related text)

Claims 8, 10 and 13:

Claims 8, 10, 13 are system version for performing the claimed method as in claims 1, 3 and 6 addressed above, wherein all claimed limitation functions have been addressed and/or set forth above and certainly a computer system would need to run and/or practice such function steps disclosed by Stallman and Oram. Thus, they also would have been obvious.

Claims 14, 16 and 19-20:

Claims 14, 16 and 19-20 are computer program products version of the claimed method, wherein all claimed limitation functions have been addressed in claims 1, 3, 6-7 above respectively. It is well known in the computer art that such

method steps can be implemented as computer program and can be practiced and /or stored on a computer operable media. Thus, they also would have been obvious in view of Stallman and Oram's teachings.

7. Claims 4, 5, 11, 12, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oram (Oram et al., Managing Projects with make) in view of Stallman (Richard M. Stallman, Using the GNU Compiler Collection for GCC3.1) in further view of Per Bothner (Compiling Java with GCJ)

Claim 4:

Oram and Stallman disclose the method as described in claim 1 above, Oram further discloses the method as described in claim 1 further comprising:

- retrieving the first source code subtask from the plurality of source code subtasks (see for example, p.79, example make file receives source code subtasks trac.c and main.c); and
- compiling the first source code subtask use c compiler (cc/gcc), the compiling resulting in object file (see for example, p.79 example code "make trace.o 'CFLAGS - -DSTATS -DBSD'").

But neither of them discloses compiling resulting in byte code. However, Bothner in the same analogous art of source code compiling, discloses using GCJ compiler to compiling Java code to generating byte code (see for example, p.3, section "compiling a Java Program with GCJ"). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made

to use Java compiler instead of C compiler to compile Java source code and generating byte code results.

Claim 5:

Oram and Stallman disclose the method as described in claim 4, but does not disclose said method further comprising: sending the byte code to a client over a computer network, wherein the byte code is adapted to be translated into client-specific object code by the client whereby the client-specific object code is formatted based upon a processor type that is located at the client. However, it is well known in the computer art at the time the invention was made that said byte code, as a type of computer program code can be sent and/or retrieved over computer network using any transmission protocols, e.g., TCP/IP. It is also well known in the computer art that byte code can be interpreted and executed at client machine by using client's Just-In-Time compiler to translated into client specific object code. Therefore, claim 5 is unpatentable over Oram, Stallman Bothner and well-known feature discussed above.

Claims 11 and 12:

Claims 11 and 12 are system version for performing the claimed method as in claims 4 and 5 addressed above, wherein all claimed limitation functions have been addressed and/or set forth above and certainly a computer system would

need to run and/or practice such function steps disclosed by Stallman, Oram and Bothner Thus, they also would have been obvious.

Claims 17 and 18:

Claims 17 and 18 are computer program products version of the claimed method, wherein all claimed limitation functions have been addressed in claims 4 and 5 above respectively. It is well known in the computer art that such method steps can be implemented as computer program and can be practiced and /or stored on a computer operable media. Thus, they also would have been obvious in view of Stallman, Bothner and Oram's teachings.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zheng Wei whose telephone number is (571) 270-1059 and Fax number is (571) 270-2059. The examiner can normally be reached on Monday-Thursday 8:00-15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571- 272-1000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ZW

/Tuan Q. Dam/

Supervisory Patent Examiner, Art Unit 2192